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(54) HIGH STRENGTH HOT ROLLED STEEL SHEET EXCELLENT IN STRETCH-FLANGING PROPERTY AND ITS PRODUCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To produce a thin high strength hot rolled steel sheet of ≤ 3.5 mm sheet thickness excellent in stretch-flanging properties and to provide a method for producing it.

SOLUTION: As to this producing method, a steel slab contg., by weight, 0.05 to 0.30% C, $\leq 1.0\%$ Si, 1.5 to 3.5% Mn, $\leq 0.02\%$ P, $\leq 0.005\%$ S, $\leq 0.150\%$ Al and $\leq 0.0200\%$ N and moreover contg. one or two kinds of 0.003 to 0.20% Nb and 0.005 to 0.20% Ti is heated at $\leq 1200^\circ\text{C}$ and is thereafter subjected to hot rolling in such a manner that the finish rolling starting temp. is controlled to 950 to 1050°C , and the finish rolling finishing temp. is controlled to $\geq 800^\circ\text{C}$, immediately after the completion of the rolling, cooling is started, and it is continuously cooled at the average cooling rate of 20 to 150°C/sec and is coiled at 300 to 550°C to form a fine bainitic structure of $\leq 3.0\ \mu\text{m}$ average grain size contg. no coarse grains of $>10\ \mu\text{m}$ grain size.

